

New Cut Landfill
Groundwater Remediation System
Status Report and Shutdown Plan

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1 Introduction

The New Cut Landfill (NCL), located in northeastern Howard County, was a Howard County-owned and operated landfill from before 1950 until 1980. Contaminated groundwater and surface water were discovered at this site and during in the 1990s and thereafter a groundwater and surface water monitoring system and groundwater remediation system were installed and operated by the County. The remediation system began treating contaminated groundwater in 2001 and the system is still operating.

The remediation system uses pump and treat technology and the goal of this system is to act as a hydraulic barrier to offsite migration of known volatile organic compound (VOC) contamination. There has not been any exceedance to U.S. EPA Maximum Contaminant Levels (MCLs) for drinking water at any sampling location at this site since 2010. Based on this data, Howard County considers the remedial system goals have been achieved and proposes to shut down the remediation system to evaluate ground and surface water quality under natural conditions.

1.1 Purpose

The purpose of this document is to:

- Provide a brief history of the site.
- Provide details on the status of the groundwater and surface water quality and the remediation system.
- Identify recommendations for system shutdown and post-shutdown monitoring.
- Delineate contingencies for any potential contamination rebound issues.

1.2 Background

The New Cut Landfill (NCL) site is located on New Cut Road, in northeastern Howard County, approximately 1.5 miles south of downtown Ellicott City. A location map is provided in **Figure 1**. Howard County purchased the 83-acre NCL property in 1944 and began open dumping at the site sometime before 1950. The County converted the site to a sanitary landfill operation in the early 1970s to comply with regulatory requirements. Operational upgrades completed in this period included: re-grading and filling the northeast fill area; installing surface water management systems; increasing site security; constructing a scale station; covering refuse daily with at least 6 inches of soil; and using heavy wheeled compactors on refuse. In May 1980, landfill operations ended at New Cut and the site was re-graded, covered with at least two feet of soil, and stabilized. Details concerning site history can be found in the Remedial Investigation and Feasibility Study of the New Cut Landfill Site, Howard County Maryland, (GeoTrans, 1994), which was completed for Howard County Government.

1.3 Physical Setting

The New Cut Landfill is located in eastern Howard County, in the Eastern Piedmont Physiographic Province. The site is situated along the east side of New Cut Road, to the south of Hillsborough Road. Ground surface elevations at the site range from approximately 525 feet above mean sea level (ft msl) on the southern portion of the site, to approximately 325 ft msl in the northern corner of the site.

Primary surface water drainage at the site is toward the headwaters to an unnamed tributary of the Patapsco River which emerges just to the south of the site, and flows northward along the west side of New Cut Road. Drainage from the northeast portion of the site is toward another small, unnamed tributary located to the northeast of the site. This tributary flows northwestward and discharges to the unnamed tributary near New Cut Road, north of the site (**Figure 1**).

Overburden at the site has been characterized as a yellow-brown sandy loam at the ground surface that grades downward to a dense saprolite (GeoTrans, 1996). The overburden ranges in thickness from 10 to 70 feet below ground surface (ft bgs) throughout the site.

The site is underlain by bedrock of the Baltimore Gneiss complex, characterized by a biotite-quartz-feldspar granite-gneiss (GeoTrans, 1994). Groundwater flow occurs primarily in the saprolite overlying the bedrock and moves radially from the landfill area, discharging to surface water bodies that flow to the north for eventual discharge to the Patapsco River. Some component of groundwater is stored and flows in fractures located in the bedrock. The overburden and fractured-rock groundwater are considered unconfined and hydraulically connected. Groundwater flow generally mimics the surface topography, flowing from higher to lower elevations and discharging to surface water features.

1.4 Historic Investigations

Howard County has been monitoring water quality at the NCL since 1971. In 1992, the County and the Health Department began sampling residential wells on properties near NCL. Trace levels of VOCs were detected in some of these wells. The County provided in-home treatment or bottled water to these residences. Potable water was extended by the County to the area around the NCL site in 2001 to ensure that residences were not using groundwater in this area.

Howard County contracted with GeoTrans, Inc. to complete the RIFS of the NCL site in 1994 in an effort to better understand the extent of contamination at the site, to evaluate the potential for human and ecological health risk, and to identify and evaluate potential remedial actions to mitigate those risks.

The remedial investigation (GeoTrans, 1994) provided a baseline characterization of both ground and surface water conditions at the site. Findings indicated that groundwater has been contaminated both on and off site, primarily to the west, with chlorinated ethanes and ethenes as well as other Volatile Organic Compounds (VOCs). No PCBs or pesticides were detected in groundwater during the RIFS. VOCs were detected in surface water in an on-site pond, but no VOCs were detected in offsite surface water. Organic Contaminants of Concern (COCs) identified in onsite and nearby offsite groundwater

wells during the RIFS are shown in **Table 1**. The COCs were identified by comparing maximum concentrations of each parameter reported in micrograms per liter (µg/L) to relevant regulatory criteria at that time which consisted of U.S. EPA Maximum Contaminant Levels (MCLs), Maryland Drinking Water Rules (Maryland State Water Laws, 1992), or USEPA Risk Based Chemical Concentrations as available (GeoTrans, 1994).

Table 1: Organic Contaminants of Concern Identified in the RIFS (GeoTrans, 1994)

Parameter	Maximum Concentration During RI/FS (µg/L)	MCL (µg/L)	MDE Risk-Based Standard (µg/L)	Well with Greatest Concentration
1,1,1-Trichloroethane	1.9	200	200	offsite
1,2-Dichloroethane	8.7	5	5	N-014, N-015
1,2-Dichloropropane	8.9	5	5	N-015
Benzene	73	5	5	N-015, N-016
Carbon Disulfide ⁽¹⁾	23		100	N-11
Chloroform ⁽¹⁾	3.2		80	offsite
Chloromethane	9.1	19	19	N-015
Cis-1,2-Dichloroethene	2.7	70	70	N-4575, N-4611
Tetrachloroethene	23	5	5	offsite
Toluene	2,000	1,000	1,000	N-015
Trichloroethene	27	5	5	N-014, N-015, N-016
Vinyl Chloride	26	2	2	N-008, N-014, N-015, N-016

Note (1) – parameter does not currently have an MCL. Use 2008 MDE Risk-Based Clean-up Standards for Type I and Type II aquifers.

Note (2) – Current MDE Risk-Based Standards are provided for comparison purposes.

Well N-015 had the highest concentration for seven of the twelve COCs. Well N-015 was a shallow, overburden well located in the southwest portion of the site. It was abandoned in 2002 due to very low productivity. This well had been installed into the buried waste.

The human health risk assessment completed as part of the RIFS (GeoTrans, 1994) indicated that no adverse human health risk was present from the surface water associated with the site. Human health risk was identified for consumption of onsite groundwater at the site due to VOCs, but not for off-site groundwater due to lack of possible exposure pathways associated with consuming the groundwater.

A feasibility study was completed to identify remedies for groundwater contamination at the site. After evaluating several potential options, a groundwater pump-and-treat system with a surface water discharge and long-term monitoring was selected for implementation. In addition, a landfill gas extraction system, as well as site improvements for surface water drainage and an improved surface cap, were completed.

A number of ground and surface water sampling events have been conducted since 1971, with an increase in the breadth of parameters and frequency over time. Since 2002, all monitoring wells, recovery wells, and stream sampling locations have been sampled two times per year.

1.5 Modeling Results and System Design

The New Cut Landfill Groundwater Remediation Design Report was completed by HSI Geo Trans (1997). This effort included the collection of hydrogeologic data, a groundwater treatability analysis, groundwater modeling, and a groundwater pump and treat system design.

Various strategies for groundwater plume containment were examined using a groundwater model and a final design was developed for the pump and treat system. The final pump and treat strategy consisted of a minimum of 15 recovery wells pumping a total of 55 gallons per minute (GPM) installed along the north, west, and south portions of the landfill site. Modeling predicted that this strategy would capture nearly all the groundwater flowing beneath the landfill and satisfy the goal of enacting a hydraulic barrier to ensure contaminated groundwater was not able to migrate offsite.

2 Existing Groundwater Monitoring/Remediation System

The groundwater well network currently consists of 12 monitoring wells and 17 recovery wells. Two of the 12 monitoring wells are in a dormant status and are monitored for water level only, while the other 10 are monitored for water level and groundwater chemistry. A total of 19 recovery wells have been installed at the site, but NBR-3 and NW-J have since collapsed and have been taken out of service. The 17 current recovery wells are monitored for water chemistry and are pumped for subsequent treatment. There are also six stream sampling locations in the two streams that are located on the west, north and northeast sides of the landfill property. The monitoring wells, recovery wells and stream sampling locations are shown in **Figure 2**.

2.1 Monitoring Well Network

The monitoring well network was installed over time around the location of the former landfilling activities, primarily along the south, west and north sides of the site. There are also three monitoring wells located to the southeast of the site. The monitoring well construction details are shown in **Table 2**.

Table 2: New Cut Landfill Monitoring Well Construction Details

Well ID	Type	Construct Date	Top of PVC Casing (ft msl)	Ground SFC (ft msl)	Well Depth (ft bgs)	Well Dia. (inch)	Depth to Rock (ft bgs)	Top of Screen (ft bgs)	Base of Screen (ft bgs)
N-8	Overburden	3/14/1980	395.23	392.21	30.00	4.00		20.00	30.00
N-10	Overburden	3/14/1980	476.72	473.55	35.60	4.00	35.60	20.00	30.00
N-11	Overburden	3/14/1980	354.92	351.86	28.30	4.00	28.30	15.00	25.00
N-13	Overburden	7/16/1983	400.85	398.78	36.00	4.00	36.00	13.50	33.50
N-14	Overburden	8/16/1993	395.19	392.68	35.00	4.00	35.00	23.00	33.00
N-16	Overburden	7/13/1993	529.47	529.47	74.00	4.00	74.00	63.00	73.00
N-17	Overburden	7/14/1993	329.36	326.68	11.50	4.00	11.50	6.50	11.50
N-18	Overburden	10/16/1993	527.56	527.56	65.00	4.00	65.00	48.00	63.00
N-101	Bedrock	7/1/1993	395.05	391.63	90.00	4.00	36.50	70.00	90.00
N-103	Bedrock	10/25/1993	526.20	526.20	245.00	4.00	72.00	220.00	240.00

Note: the dormant wells, NBR-4 and NW-D2, are not included in this table since they are only used for groundwater levels.

Note: FT MSL – feet above mean sea level.

Note: FT BGS – feet below ground surface.

2.2 Recovery Well Network

The recovery wells were located based on the results of the groundwater modeling effort. The wells are installed to ring the site from the south, around the west side, and terminated to the northeast to coincide with the groundwater gradient. The recovery well construction details are shown in **Table 3**.

The groundwater remediation system has been operational since November 2001 with only minor operational and maintenance interruptions. The groundwater remediation system has run continuously since start-up with the exception of the shutdown from 7/29/2016 through 10/15/2016 due to a line leak and repair.

Table 3: New Cut Landfill Recovery Well Construction Details

Well ID	Type	Construct Date	Top of Casing (ft msl)	Ground SFC (ft msl)	Well Depth (ft bgs)	Well Dia. (inch)	Depth to Rock (ft bgs)	Open Int. (Ft bgs)	Top of Screen (ft bgs)	Base of Screen (ft bgs)	Bottom of Casing (Recovery Wells)
N-4575	Bedrock	pre1993	469.01	470.67	175.00	8.00					
N-4611	Bedrock	6/30/1982	463.88	463.41	162.00	6.00	43.00	45-162	N/A	N/A	45.00
NW-A	Bedrock	4/20/2000	463.04	463.06	175.00	6.00	45.00	N/A	15.00	175.00	51.00
NW-B	Bedrock	5/2/2000	453.08	454.02	200.00	8.00	64.00	70-200	N/A	N/A	70.00
NW-C	Bedrock	4/28/2000	424.98	425.36	175.00	8.00	26.00	30-175	N/A	N/A	30.00
NW-D	Bedrock	5/19/2003	405.7	405.51	218.00	8.00	68.00	78-218	N/A	N/A	78.00
NW-E	Bedrock	5/4/2000	405.27	405.08	175.00	6.00	34.00	N/A	15.00	155.00	39.00
NW-F	Bedrock	5/2/2000	402.00	402.55	175.00	6.00	16.00	N/A	15.00	175.00	20.00
NW-G	Bedrock	4/14/2000	398.43	399.17	175.00	8.00	75.00	80-175	N/A	N/A	80.00
NW-H	Bedrock	4/18/2000	403.29	404.15	175.00	8.00	42.00	50-175	N/A	N/A	50.00
NW-I	Bedrock	4/14/2000	406.60	407.41	175.00	8.00	75.00	80-175	N/A	N/A	80.00
NW-J	Bedrock	4/26/2000	404.85	405.87	175.00	8.00	44.00	50-175	N/A	N/A	50.00
NW-K	Bedrock	4/25/2000	408.44	408.81	175.00	8.00	55.00	61-175	N/A	N/A	61.00
NW-L	Bedrock	5/3/2000	409.45	410.36	175.00	6.00	55.00	N/A	15.00	175.00	60.00
NBR-1	Bedrock	10/23/1996	457.71	458.91	150.00	6.00	36.00	40-150	N/A	N/A	40.00
NBR-2	Bedrock	10/22/1996	401.81	401.84	150.00	6.00	25.00	30-150	N/A	N/A	30.00
NBR-3	Bedrock	10/23/1996	390.81	391.36	150.00	6.00	2.00	19-150	N/A	N/A	19.00
NBR-5	Bedrock	10/25/1996	427.33	429.34	175.00	6.00	2.50	19-175	N/A	N/A	19.00
NBR-6	Bedrock	10/23/1996	400.32	401.10	150.00	6.00	56.00	60-150	N/A	N/A	60.00

Note that wells NW-J and NBR-3 have collapsed and are no longer in service.

Note: FT MSL – Feet above mean sea level.

Note: FT BGS – Feet below ground surface.

2.3 Sampling and Analysis Program

The wells and fixed stream sampling locations are sampled two times per year, in April and October, by Howard County according to standards delineated in the Ground and Surface Water Sampling Report for New Cut Landfill, Howard County, MD (Howard County, 2013). The monitoring well and stream samples are analyzed for a list of VOC parameters and various metals and other inorganic parameters in accordance with MDE guidance. The recovery well samples are analyzed for the same list of VOC parameters along with iron and manganese. The monitoring well and stream sample parameters and methods, along with MDE-required, parameter-specific Practical Quantitation Limits (PQLs) are shown in Table 4.

Sampling results are compared to U.S. Environmental Protection Agency (EPA) National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs), unless otherwise noted.

Table 4: Monitoring Well and Stream Sample Parameters

Parameter	Method	PQL Required	Units
Acetone	8260B	5.00	µg/L
Acrylonitrile	8260B	5.00	µg/L
Benzene	8260B	1.00	µg/L
Bromochloromethane	8260B	1.00	µg/L
Bromodichloromethane	8260B	1.00	µg/L
Bromoform	8260B	1.00	µg/L
Bromomethane	8260B	1.00	µg/L
2-Butanone	8260B	5.00	µg/L
Carbon Disulfide	8260B	1.00	µg/L
Carbon Tetrachloride	8260B	1.00	µg/L
Chlorobenzene	8260B	1.00	µg/L
Chloroethane	8260B	1.00	µg/L
Chloroform	8260B	1.00	µg/L
Chloromethane	8260B	1.00	µg/L
Chlorodibromomethane	8260B	1.00	µg/L
1,2-Dibromo-3-chloropropane	8260B	1.00	µg/L
1,2-Dibromoethane	8260B	1.00	µg/L
Dibromomethane	8260B	1.00	µg/L
1,2-Dichlorobenzene	8260B	1.00	µg/L
1,4-Dichlorobenzene	8260B	1.00	µg/L
trans-1,4-Dichloro-2-butene	8260B	5.00	µg/L
1,1-Dichloroethane	8260B	1.00	µg/L
1,2-Dichloroethane	8260B	1.00	µg/L
1,1-Dichloroethene	8260B	1.00	µg/L
cis-1,2-Dichloroethene	8260B	1.00	µg/L
trans-1,2-Dichloroethene	8260B	1.00	µg/L
Methylene Chloride	8260B	1.00	µg/L
1,2-Dichloropropane	8260B	1.00	µg/L
trans-1,3-Dichloropropene	8260B	1.00	µg/L
cis-1,3-Dichloropropene	8260B	1.00	µg/L
Ethylbenzene	8260B	1.00	µg/L
2-Hexanone	8260B	5.00	µg/L
Iodomethane	8260B	1.00	µg/L
4-Methyl-2-Pentanone(MIBK)	8260B	5.00	µg/L
Methyl Tertiary Butyl Ether	8260B	2.00	µg/L
Styrene	8260B	1.00	µg/L
1,1,1,2-Tetrachloroethane	8260B	1.00	µg/L
1,1,2,2-Tetrachloroethane	8260B	1.00	µg/L
Tetrachloroethene	8260B	1.00	µg/L
Toluene	8260B	1.00	µg/L
1,1,1-Trichloroethane	8260B	1.00	µg/L
1,1,2-Trichloroethane	8260B	1.00	µg/L
Trichloroethene	8260B	1.00	µg/L
Trichlorofluoromethane	8260B	1.00	µg/L
1,2,3-Trichloropropane	8260B	1.00	µg/L
Vinyl Acetate	8260B	1.00	µg/L
Vinyl Chloride	8260B	1.00	µg/L
Total Xylenes	8260B	1.00	µg/L

Table 4: Continued

Parameter	Method	PQL Required	Units
Antimony, Total	200.8	0.0020	mg/L
Arsenic, Total	200.8	0.0020	mg/L
Barium, Total	200.8	0.0100	mg/L
Beryllium, Total	200.8	0.0020	mg/L
Cadmium, Total	200.8	0.0040	mg/L
Chromium, Total	200.8	0.0100	mg/L
Calcium, Total	200.8	0.0800	mg/L
Cobalt, Total	200.8	0.0100	mg/L
Copper, Total	200.8	0.0100	mg/L
Lead, Total	200.8	0.0020	mg/L
Nickel, Total	200.8	0.0110	mg/L
Magnesium, Total	200.8	0.0040	mg/L
Mercury, Total	245.1	0.0002	mg/L
Potassium, Total	200.8	0.3900	mg/L
Selenium, Total	200.8	0.0350	mg/L
Silver, Total	200.8	0.0100	mg/L
Sodium, Total	200.8	0.2000	mg/L
Thallium, Total	200.8	0.0020	mg/L
Vanadium, Total	200.8	0.0100	mg/L
Zinc, Total	200.8	0.0100	mg/L
pH, Field	SM4500B	0.1000	pH Units
Alkalinity, Total	SM2320B	1.0000	mg/L
Hardness	SM2340	0.5000	mg/L
Chloride	SM4500B	0.3900	mg/L
Specific Conductance, Field		1.0000	umhos/cm
Nitrate-N	EPA 352	0.0600	mg/L
Chemical Oxygen Demand (COD)	EPA 405	10.0000	mg/L
Turbidity in NTU	SM2130	0.1100	NTU
Ammonia	EPA 350.2	1.0000	mg/L
Sulfate	EPA 375	0.3800	mg/L
Total Dissolved Solids	SM 2540	10.0000	mg/L

Since 2014, Howard County provides a report to the Solid Waste Program at the Maryland Department of the Environment (MDE) that includes the results of the most recent sampling event, the cumulative five-year data for each sampling location, a groundwater elevation map showing groundwater flow direction, and results of landfill gas perimeter probe monitoring. Each report is submitted within 90 days of completion of the month in which sampling is completed.

3 Status of Groundwater Quality

3.1 Water Elevation Maps

Groundwater level data is collected monthly at all 12 monitoring wells using an electronic water level meter. This data is normalized to altitude above mean sea level to facilitate comparison to a fixed datum.

The data (**Figure 3**) indicate that groundwater flows, as expected, down topographic gradient toward surface water features located to the northwest of the site.

3.2 Groundwater Sampling Results

Overall, the groundwater well network has experienced very few exceedances to regulatory criteria for the COCs identified in **Table 1**.

The County revised the COC list based on data collected after the groundwater remediation system began treating contaminated groundwater. This update was completed to identify those contaminants that may pose a risk to human health or the environment for the time period since the remediation system was started in November 2001. **Table 5** shows the revised list of COCs based on sampling results from 2002 through 2012.

Table 5: Organic Contaminants of Concern Revised Based on Data 2002 - 2012

Revised Contaminants of Concern	Regulatory Criteria (µg/L) ⁽¹⁾	Maximum Concentration 2002-2012 (µg/L)	Well with Greatest Concentration	Date of Sample with Maximum Concentration 2002-2012
1,1-Dichloroethane ⁽²⁾	90.0	17.00	NBR-1	October 2002
1,4-Dichlorobenzene	75.0	11.00	NW-L	October 2002
Chloroethane ⁽²⁾	3.6	12.30	NW-B	October 2005
Cis-1,2-Dichloroethene	70.0	42.00	NW-K	October 2002
Tetrachloroethene	5.0	6.80	NBR-1	May 2002
Trichloroethene	5.0	7.80	NBR-1	April 2003
Vinyl Chloride	2.0	5.80	NBR-1	October 2005

Note 1: Regulatory criteria is MCL, or MDE Risk-Based Clean-up Standards for Type I and Type II Aquifers if no MCL is available for a parameter.

Note 2: Parameter does not have an MCL. Use MDE Risk-Based Clean-up Standards for Type I and Type II aquifers.

Note: Concentrations in red indicate exceedance to Regulatory Criteria.

Several of the COCs identified in the RI/FS and listed in **Table 1** are not included in **Table 5** because there have only been minimal detections above the PQL for these parameters since the remediation system began operating in 2001. These parameters include 1,1,1-Trichloroethane, 1,2-Dichloroethane, 1,2-Dichloropropane, Benzene, Carbon Disulfide, Chloroform, Chloromethane, and Toluene. The following

three new parameters were identified by the County as COCs based on the 2002 – 2012 data review: 1,1-Dichloroethane, 1,4-Dichlorobenzene, and Chloroethane.

Tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride are all chlorinated alkenes and are related in terms of dechlorination processes whereby PCE is reduced eventually to ethene via replacement of chlorines with hydrogen in the appropriate biological and oxygenated conditions. Vinyl Chloride is the final hazardous constituent before the compound is further reduced to ethene, which is non-toxic. 1,1-Dichloroethane and chloroethane are chlorinated alkanes, that are related in terms of anaerobic processes whereby 1,1-dichloroethane is reduced to chloroethane (Fetter, 1999). 1,4-Dichlorobenzene is a chlorinated aromatic hydrocarbon that has historically been used as a pesticide (USEPA, 2000).

The most recent statistical trend analysis of monitoring well data was completed after the second sampling event of 2012 (ARM, 2013). Results of this statistical analysis indicated that at the time, there were no exceedances to any MCL for any VOC at any monitoring well within the previous five years (2007 – 2012). Further, trend analysis performed for each monitoring well indicated that there were no upward trends for any VOCs at any monitoring well.

The most recent MCL exceedance for any parameter at any well sampling location at NCL occurred in recovery well NW-B during 2010. In this instance, vinyl chloride was detected at 2.2 µg/L, which is greater than the MCL for vinyl chloride of 2.0 µg/L.

Since the beginning of 2013, there have been 9 groundwater sampling events at NCL and a total of 2,366 analyses of the current COCs at identified in **Table 5**. Of those, there have been a total of 330 detections of COCs at concentrations greater than their respective PQL, which is a detection rate of 14%. Of these results, only four have exceeded their respective regulatory threshold. These four exceedances were for chloroethane, which was detected at concentrations greater than the Maryland Department of the Environment, Risk Based Clean-up Standards for Type I and Type II Aquifers. **Table 6** provides a summary of COC detections since the beginning of 2013.

Table 6: Summary of Organic Contaminants of Concern Detected in Groundwater Since the Beginning of 2013

Parameter	Regulatory Criteria (µg/L) ⁽¹⁾	Number of Analyses	Number Detections > PQL	Maximum Concentration: (µg/L)	Well with Greatest Concentration	Date of Sample with Maximum Concentration: 2013- Present
1,1-Dichloroethane ⁽²⁾	90	338	82	6.2	NW-B	April 2014
1,4-Dichlorobenzene	75	338	55	6.7	NW-K	October 2013
Chloroethane ⁽²⁾	3.6	338	40	4.3	NW-L	April 2013
Cis-1,2-Dichloroethene	70	338	131	9.6	NBR-1	April 2013
Tetrachloroethene	5	338	0	0.95 J	N-011	October 2014
Trichloroethene	5	338	14	2.1	N-016	October 2015
Vinyl Chloride	2	338	8	1.4	NW-B	April 2015

Note 1: Regulatory criteria is MCL, or MDE Risk-Based Clean-up Standards for Type I and Type II Aquifers, if no MCL is available for a parameter.

Note 2: parameter does not have an MCL. Use MDE Risk-Based Clean-up Standards for Type I and Type II aquifers.

Note: concentrations in red indicate exceedance to Regulatory Criteria.

Examining the locations of wells with the greatest concentrations of COCs indicates that there are two distinct areas: wells NW-B and NBR-1 are located on the southwest side of the site, while NW-K and NW-L are located on the northeast side of the site. This pattern, running southwest to northeast along geologic-strike, is the same as was shown in the 2002 -2012 results.

Table 7 provides a summary of COC exceedances to regulatory criteria by well location since the remediation system began operating in November 2001. As shown in **Table 7**, the most recent exceedance to regulatory criteria in any groundwater well was at recovery well NW-C during the October 2014 sampling event. Chloroethane was detected at 3.8 µg/L in well NW-C during the October 2014 sampling event, while the MDE Risk-Based Cleanup Standard for Type I and Type II Aquifers is 3.6 µg/L.

Wells NBR-1, NBR-5, NW-A, NW-B, NW-C, N-4611, and N-4575 are all located in close proximity to each other in the southwest corner of the site. Wells N-101, NW-K, and NW-L are located in the northern portion of the site. Wells N-008 and NW-I, located nearby N-101, NW-K, and NW-L have not experienced any COC exceedances to regulatory criteria since the remediation system was started in November 2001. This trend in detections along geologic strike has been consistent since the remediation system began operating.

Table 7: Summary of Regulatory Criteria Exceedances: November 2001 – April 2017

Well Number	Number of Regulatory Criteria Exceedances	Parameters	Last Exceedance
Monitoring Wells			
N-008	0		
N-010	0		
N-011	0		
N-013	0		
N-014	0		
N-016	0		
N-017	0		
N-018	0		
N-101	8	Chloroethane	Oct-09
N-103	0		
Recovery Wells			
NBR-1	12	PCE, TCE, VC	Oct-05
NBR-2	0		
NBR-5	2	PCE	Apr-03
NBR-6	0		
NW-A	1	TCE	Apr-06
NW-B	20	Chloroethane, VC	Apr-11
NW-C	10	Chloroethane, VC	Oct-14
NW-D	0		
NW-E	0		
NW-F	0		
NW-G	0		
NW-H	0		
NW-I	0		
NW-K	8	Chloroethane, VC	Apr-08
NW-L	10	Chloroethane	Apr-13
N-4611	3	VC	Apr-07
N-4575	1	VC	Oct-05

Note: Parameter abbreviations

PCE: Tetrachloroethene

TCE: Trichloroethene

VC: Vinyl Chloride

3.3 Surface Water Sampling Results

Surface water sampling at the six fixed stations has not revealed any MCL exceedances since the remediation system was brought online in November 2001. Surface water sampling results were also compared to MDE Numerical Criteria for Toxic Substances (NCTS), using the Human Consumption of Drinking Water and Organisms Category. NS-001 is the only stream sample location that has experienced a VOC exceedance to its respective MDE NCTS criteria since the groundwater remediation system was started in November 2001. This location had exceedances to the NCTS criteria of 0.25 µg/L for vinyl chloride during the October 2003 (0.40 µg/L), April 2010 (0.44 µg/L) and April 2011 (0.49 µg/L) sampling events. All three of these results are J-flagged indicating an estimated value since the PQL mandated by MDE is 1.0 µg/L for vinyl chloride.

Sample NS-001 is located in a drainage swale that flows out of an old settling basin associated with the landfill. In addition, this drainage swale receives discharge from a historic perforated underdrain that was installed along the southern and southwestern portion of the landfill face. In 2014, the County completed construction of a corrugated, high-density polyethylene (HDPE) liner for this swale to promote volatilization of any VOCs that may be associated with surface water discharge in this swale. Since installation of this system, there have been no detections of vinyl chloride in the surface water at this location.

3.4 Mass Flux to Treatment System

All groundwater that is extracted via the recovery wells is pumped to the treatment system. Although the remediation system was started in November 2001, sampling and analysis of the influent water to the treatment system has been ongoing since April 2003. Over 500 million gallons of groundwater has been pumped and treated with this system from start-up through April 2017.

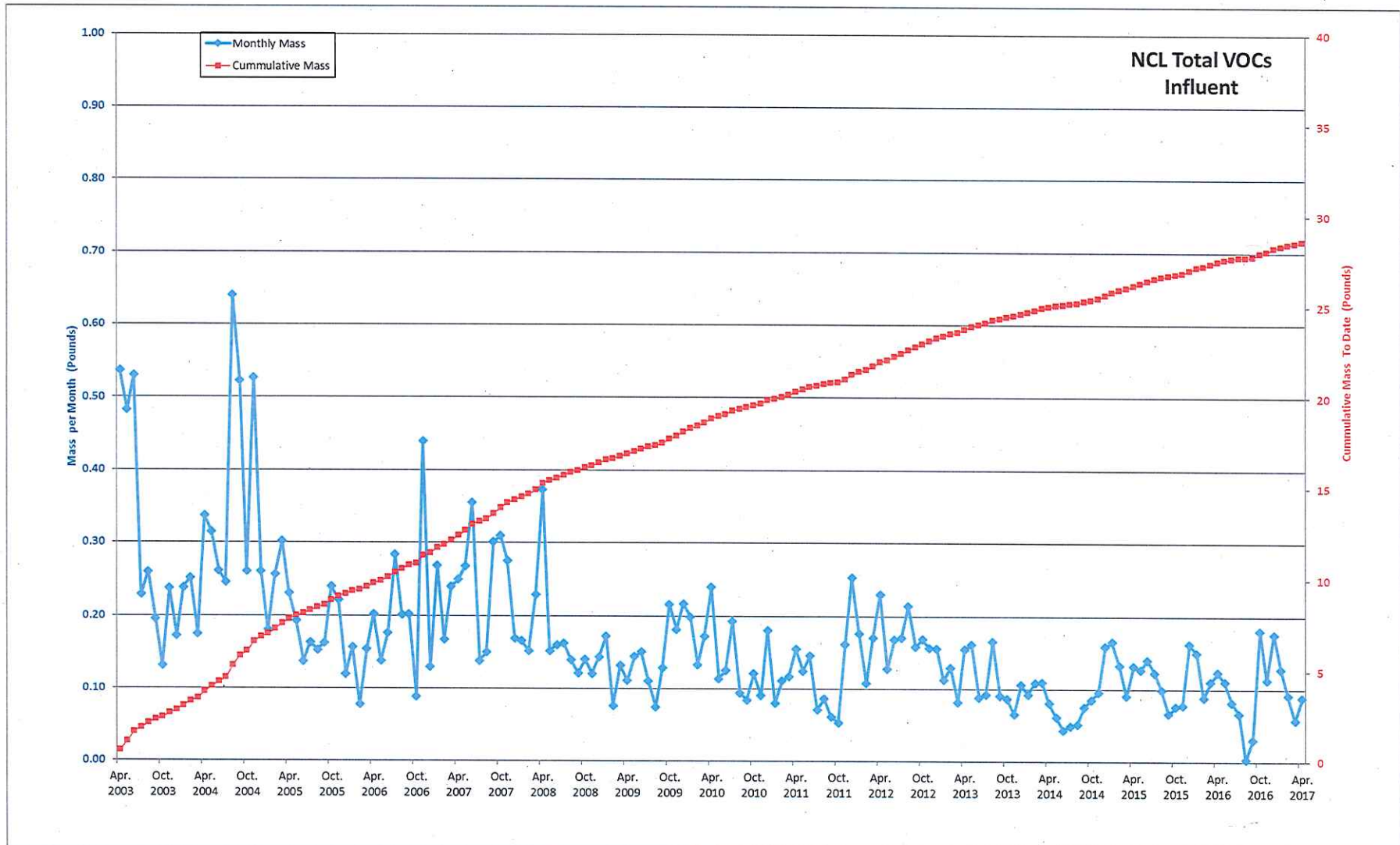
Analysis of the treatment system influent along with total system discharge, provides a means of calculating the mass of contaminants removed each month, and thus cumulative mass removed and treated.

As shown in **Figure 4**, based on analysis of system influent sampling results for the period April 2003 through April 2017, a total of 28.60 pounds of VOCs have been removed by the treatment system. This total does not include removal of VOCs from groundwater by the treatment system during the period from system start-up in November 2001 through March 2003 since influent data was not collected during that time period. The maximum removal rate of 0.64 pounds occurred during August 2004, which is the month with the greatest amount of groundwater pumped and treated. In April 2017, the latest month for which data are available, 0.09 pounds of VOC were treated by the system. The monthly rate of VOC removal dropped after April 2008, when the removal rate was 0.37 pounds. The maximum removal rate in all subsequent months was 0.25 pounds, in December 2011, while the minimum removal rate after April 2008 was 0.043 pounds in June 2014. The system was not operational during the September – October 2016 timeframe.

Cumulatively, during the first seven years of operation from November 2001 through April 2008 an average of 2.87 pounds of VOCs was removed per year by the treatment system. This value is biased low, since influent sampling and analysis data is not available for the period November 2001 through March 2003, when concentrations of VOCs should have been greatest. The treatment system has removed an average of 1.47 pounds of VOCs per year since April 2008.

The summary of the remediation system influent data is provided in **Appendix B**.

Figure 4: Total VOCs Treatment System Influent



4 Recommendations

Empirical data collected as part of the ongoing remediation system monitoring demonstrates that there have not been any sample results in groundwater or surface water that have exceeded MCLs since 2010. The most recent COC exceedance to regulatory criteria was at well NW-C, which experienced a chloroethane concentration of 3.8 µg/L during the October 2014 sampling event. The parameter does not currently have an MCL; however, the MDE Cleanup Criteria for Type I and Type II Aquifers for chloroethene is 3.6 µg/L. Further, the remediation system has been running continuously, with few exceptions, since 2001 and has removed a total of almost 29 pounds of total VOCs.

Given the low concentrations of VOCs detected during site monitoring, the remedial action goals have been achieved and the necessity for a hydraulic barrier provided by the remediation system is no longer warranted. Therefore, the County plans to shut down the remediation system and continue monitoring ground and surface water quality for the next four-year period, at a minimum, to ensure that remedial action goals are maintained under natural conditions. Section 5 provides details concerning proposed Attainment Phase Monitoring Program as well as thresholds for system restart if rebound of contaminants is detected.

5 Attainment Phase

5.1 Attainment Phase Site Monitoring Program

To ensure that the site remains in compliance with applicable regulatory standards and to monitor water quality trends in the future, the County will continue the existing ground and surface water monitoring program, as described in the Ground and Surface Water Monitoring Report for New Cut Landfill, Howard County, MD (June 2013).

In summary, this program consists of the following elements:

- Monthly groundwater level monitoring at all recovery, monitoring and dormant wells.
- Semi-annual groundwater sampling/analysis of all monitoring and recovery wells to be completed in April and October of each year.
- Semi-annual surface water sampling/analysis of all surface water sampling stations to be completed in April and October of each year.
- NPDES discharge sampling, as required by the existing NPDES regulations and site permit.
- Preparation of a Semi-annual report of findings in accordance with MDE guidelines due on July 31st and January 31st of each calendar year.

The Attainment Phase Site Monitoring Program will be continued for a minimum of four years and the data will be evaluated as described in Sections 5.2 and 5.3 for evidence of contaminant rebound effects. The method of remediation well sampling will be addressed under separate cover and in cooperation with MDE.

5.2 Rebound Evaluation

Results of semi-annual monitoring and recovery well sampling will be used to evaluate potential rebound of COC concentrations. Rebound, or an increase in COC concentrations at groundwater wells after the remediation system is shut down, can occur due to desorption of COCs from soil to groundwater, diffusion of COCs from less permeable portions of the formation, additional transport from the original source areas, or some combination of these mechanisms.

5.3 Criteria for Additional Action

5.3.1 COC-Specific Rebound Ratio Calculation

Following each sampling event, the rebound response for all current COCs at each well will be evaluated. For each well, all COC results will be normalized based on their respective regulatory criteria to determine if, and to what degree, COC rebound is occurring. The normalization process for each COC at each well consists of calculating the ratio between the most recent concentration of that COC (C), and value of the regulatory criteria for that COC (C_0).

$$COC\ Rebound\ Ratio = \frac{C}{C_0}$$

The regulatory criteria for groundwater are U. S. EPA MCLs, if available. If a particular COC does not have an MCL, then the Maryland Department of the Environment Risk-Based Clean-up Standards for Type I and Type II Aquifers available for that COC is used. The ratio is only derived for those COCs with a detection of that COC on the most recent sampling effort. A non-detect result returns a rebound ratio value of zero.

Using this ratio considers the concentration of each COCs on a well-by-well basis and allows for the evaluation of individual well responses to the effects, if any, of system shutdown. This methodology allows for meaningful comparison of results to water quality standards that are considered protective of human health and the environment. A threshold that is based on a percentage of the actual standard provides for a proactive approach with the goal of ensuring that future exceedances to regulatory criteria do not occur.

5.3.2 COC-Specific Rebound Ratio Evaluation for Each Well

The rebound ratio calculation for each COC at each well yields a positive value. A rebound ratio value greater than 1.00 indicate an exceedance to the regulatory criteria and justifies immediate restart of the impacted portion of the system. The ratio values for each COC are then compared to the ratio

categories below to determine the rebound status of each well. Using this method, the potential rebound responses for each well are divided into the following three categories:

1. Category A: High Rebound Response. Calculated rebound ratio for any $\text{COC} > 0.75$
 - a. Recovery wells in the vicinity of any well experiencing a High Rebound Response will be immediately restarted to ensure that COC capture is re-established.
2. Category B: Gradual Rebound Response. $0.50 < \text{calculated rebound ratio for any COC} \leq 0.75$
 - a. Any well with results experiencing Gradual Rebound Response will be closely evaluated, but the recovery wells in the vicinity will not be restarted unless the results indicate a Category A response.
3. Category C: No Rebound Response. Calculated rebound ratio for any $\text{COC} \leq 0.50$
 - a. No additional action is planned for these wells.

It is important to note that specific parameters may experience different responses within a given well during a sampling event. However, any rebound ratio greater than 0.75 for any COC in any well will trigger recovery wells in the vicinity of that well to be restarted.

5.3.3 Collective COC Rebound Ratio Evaluation for Each Well

In addition to COC-specific rebound ratio evaluations described in Section 5.3.2, the collective COC rebound will also be examined for each well based on the most recent sampling data to determine if the collective effects of COCs in a well may indicate a rebound condition that warrants partial or total system restart.

The same rebound ratio calculations for each well will be used to evaluate the collective COC rebound. Any well with three or more COCs having Category B Rebound Ratios during a sampling event will indicate a collective COC rebound condition that warrants restarting the remediation system in the vicinity of the impacted well or wells.

5.4 System Restart Provisions

In the event of COC rebound ratios that indicate the necessity to restart the remediation system, or a portion thereof, the County will take the following steps. The County will cooperate with MDE to determine which portions of the remediation system must be restarted based on the well or wells that are impacted.

If any portion of the remediation system is restarted to address COC rebound, then the site will be considered in remedial action phase. The pump and treat system, or portion thereof, will operate and all remedial action site management, as described in the Ground and Surface Water Monitoring Report for New Cut Landfill (Howard County, 2013) will apply for a minimum of four sampling events.

After each sampling event, COC-specific rebound ratios will be calculated as described in Section 5.3.1. Once COC-specific rebound ratio's for all wells are both category B or C and no well has exceeded the Collective COC-Rebound Ratio criteria of three or more B category COCs for four consecutive sampling events, then the remedial action phase will again be considered complete and the system will return to Attainment Phase and the Attainment Phase Site Monitoring Program will be re-initiated as described above.

5.5 Completion of Attainment Phase

The Attainment Phase will not be evaluated for completion until the beginning of the third year after initiation of the Attainment Phase Site Monitoring Program. The Attainment Phase will be considered complete when all wells have less than three COC-specific Category B Rebound Ratios for four consecutive sampling events after the first two-year period of the Attainment Phase Monitoring is complete. When the Attainment Phase is complete, the County, in cooperation with MDE, will move to dismantle the remediation system and abandon those recovery wells that are deemed unnecessary for long-term site monitoring.

The COC-specific rebound ratios for each well are provided in **Table 8** for monitoring wells and **Table 9** for recovery wells. These ratios are based on the most recent sample data collected during April 2017 and provide a starting point for future analysis of rebound. The supporting data for the ratio calculations is provided in Appendix C. Rebound ratios for all COCs at all monitoring and recovery wells will be updated after each semi-annual sampling event and the updated tables will be included in the Semi-Annual Ground and Surface Water Quality Report.

Table 8: Monitoring Well COC Rebound Ratios

Parameter	Monitoring Wells									
	N-008	N-010	N-011	N-013	N-014	N-016	N-017	N-018	N-101	N-103
1-1 Dichloroethane	0	0	0	0	0	0.01	0.01	0	0	0
1,4-Dichlorobenzene	0	0	0	0	0	0	0	0	0	0
Chloroethane	0.16	0	0	0	0	0	0	0	0.26	0
Cis-1,2-Dichloroethene	0	0	0	0	0	0.02	0.02	0	0	0
Tetrachloroethene	0	0	0	0	0	0.10	0	0	0	0
Trichloroethene	0	0	0	0	0	0.26	0	0	0	0
Vinyl Chloride	0	0	0	0	0	0	0	0	0	0
Collective Rebound	No	No	No	No	No	No	No	No	No	No

Table 9: Recovery Well COC Rebound Ratios

Parameter	Recovery Wells								
	NW-A	NW-B	NW-C	NW-D	NW-E	NW-F	NW-G	NW-H	NW-I
1-1 Dichloroethane	0	0.04	0.01	0	0.01	0	0	0.01	0.01
1,4-Dichlorobenzene	0	0.02	0.01	0.01	0	0	0	0.07	0.04
Chloroethane	0	0.44	0.28	0	0	0	0	0	0
Cis-1,2-Dichloroethene	0.02	0.03	0.01	0	0.01	0.01	0.01	0.04	0.03
Tetrachloroethene	0	0	0	0	0	0	0	0	0
Trichloroethene	0.09	0.14	0.09	0	0	0	0	0	0
Vinyl Chloride	0	0.60	0	0	0	0	0	0	0
Collective Rebound	No	No	No	No	No	No	No	No	No

Table 9, Continued: Recovery Well Rebound Ratios

Parameter	Recovery Wells							
	NW-K	NW-L	N-4611	N-4575	NBR-1	NBR-2	NBR-5	NBR-6
1-1 Dichloroethane	0.01	0	0.02	0.02	0.02	0.03	0	0
1,4-Dichlorobenzene	0.07	0.03	0.01	0	0	0.02	0	0
Chloroethane	0.31	0.26	0.20	0	0.14	0	0	0
Cis-1,2-Dichloroethene	0.06	0.01	0.05	0.05	0.06	0.06	0	0
Tetrachloroethene	0	0	0.08	0	0	0	0	0
Trichloroethene	0.10	0	0.15	0.24	0.17	0.17	0	0
Vinyl Chloride	0	0	0	0	0	0	0	0
Collective Rebound	No	No	No	No	No	No	No	No

Note: Category B ratio shown in yellow highlight.

5.6 Discussion of Most Recent Ratios

5.6.4 Monitoring Wells

The most-recent results for the COCs at each monitoring well along with calculated ratios are provided in **Table 10** in Appendix C. As shown in **Table 8**, Monitoring wells N-010, N-011, N-013, N-014, N-018 and N-103 did not experience any detections for any COCs during the most recent sampling event in April 2017.

No monitoring wells experienced any Category A or Category B Rebound Ratios during the April 2017 sampling event. Overburden well N-016, located on the southeast side of the former landfill, experienced Category C Rebound Ratios for four COCs. Monitoring well N-017, located in the northwest corner of the landfill property, experienced Category C Rebound Ratios for two COCs. Monitoring wells N-008 and N-101 each experienced only one Category C Rebound Ratio during the April 2017 sampling event.

5.6.5 Recovery Wells

The most-recent results for the COCs at each recovery well along with calculated ratios are provided in **Table 11** in Appendix C. As shown in **Table 9**, category B Rebound Ratios were calculated at recovery well NW-B. Well NW-B, located on the southwest side of the former landfill, experienced Category B Rebound Ratio for Vinyl Chloride (0.60). Recovery well NW-B also experienced Category C Rebound Ratios for all remaining COCs except Tetrachloroethene, which was non-detect.

All the other recovery wells had at least one Category C Rebound Ratio, except wells NBR-5 and NBR-6, which did not have any detections for any COCs during the April 2017 sampling event.

References

ARM Group, LLC (2012), Statistical Analysis of Groundwater Data, New Cut Landfill, October 2012 Reporting Period. ARM Project M13112. April 2013

Fetter, C.W. (1999). Contaminant Hydrogeology, Second Edition. Waveland Press, Long Grove, IL.

GeoTrans, 1994. Remedial Investigation and Feasibility Study of the New Cut Landfill Site, Howard County, MD. April 1994.

GeoTrans, 1996: Data and Regulations Review Report, New Cut Landfill Closure, Howard County Maryland. October 1996.

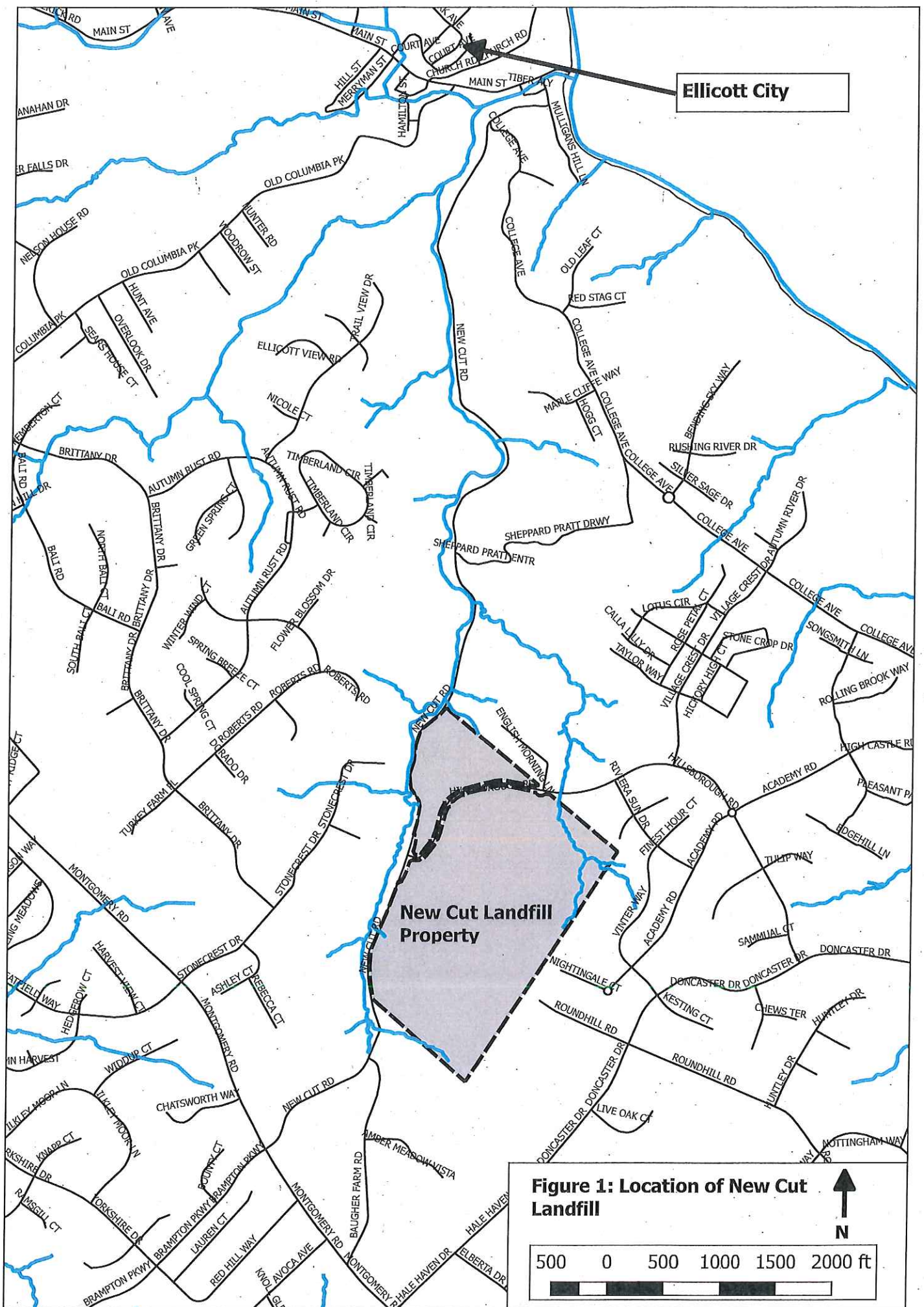
Howard County, (2013), Ground and Surface Water Monitoring Report for New Cut Landfill, Howard County, MD. June 2013.

HIS GeoTrans, (1997). New Cut Landfill Groundwater Remediation Design, Field Investigation and Groundwater Modeling Report. Project Number E004-007. September 1997.

Maryland Department of the Environment, (2008). State of Maryland Department of the Environment, Cleanup Standards for Soil and Groundwater, Interim Final Guidance. June 2008.

USEPA, 2000. 1,4-Dichlorobenzene (para-Dichlorobenzene). Retrieved from <https://www.epa.gov/sites/production/files/2016-09/documents/1-4-dichlorobenzene.pdf>

APPENDIX A: FIGURES



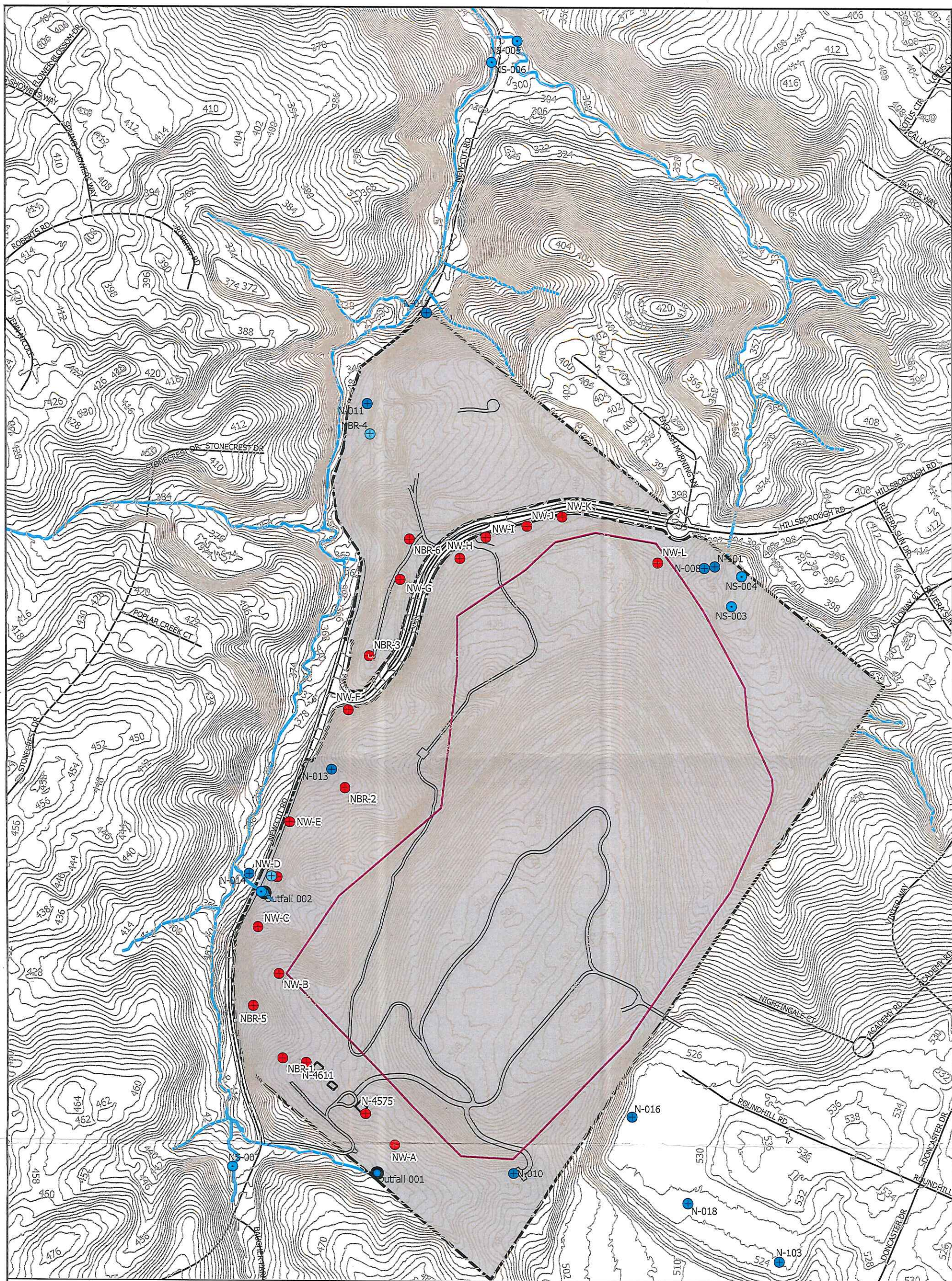


Figure 2: New Cut Landfill Sampling Locations

250 0 250 500 ft

N ↑

Legend

- Stream Sampling Locations

● Outfall Sampling Locations

Groundwater Wells

⊕ Dormant Well

- Monitoring Well

Groundwater Wells

 Recovery Well

☐ Limit of Waste

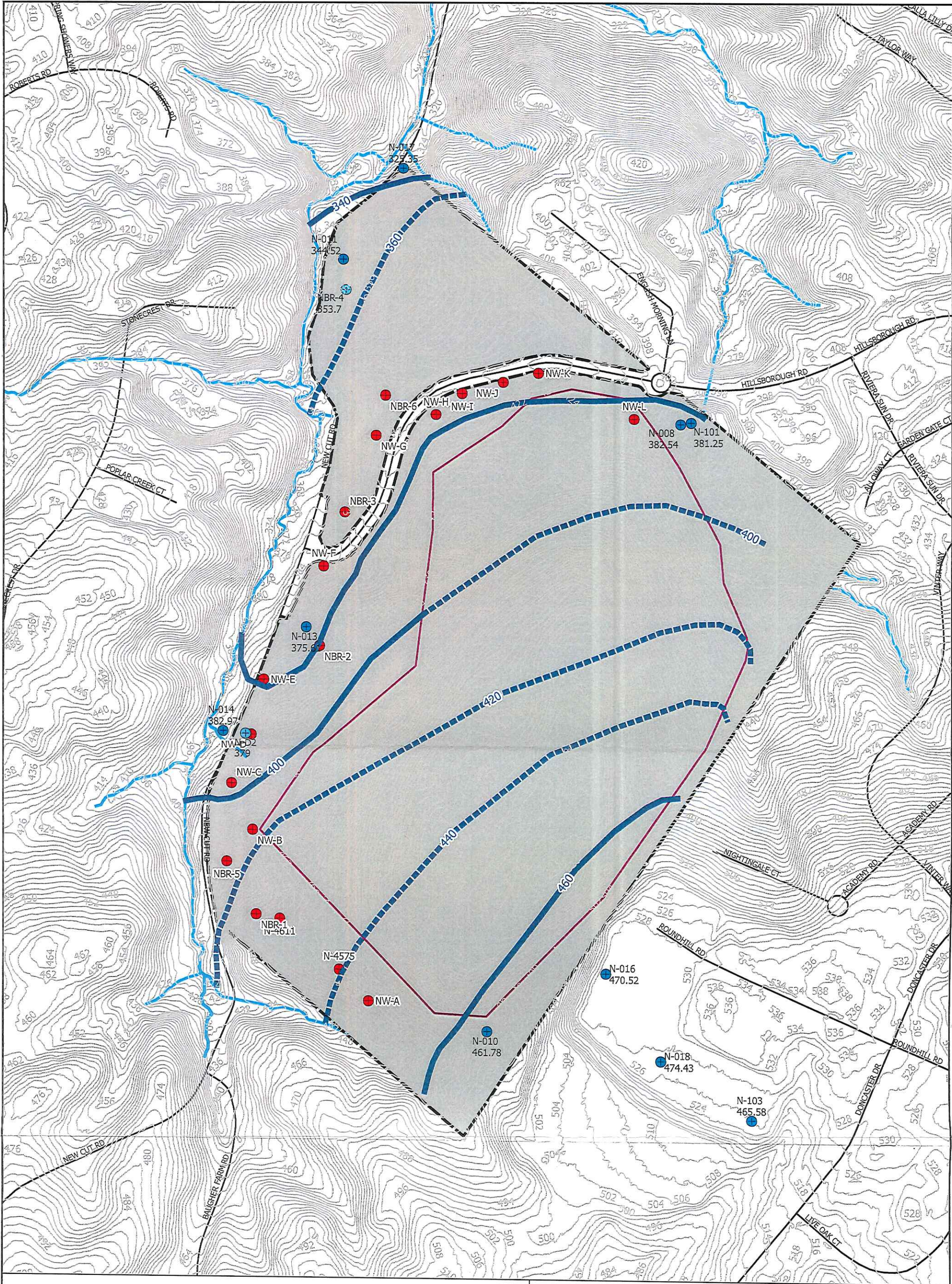
- Streams

Topographic Contours - 2-foot

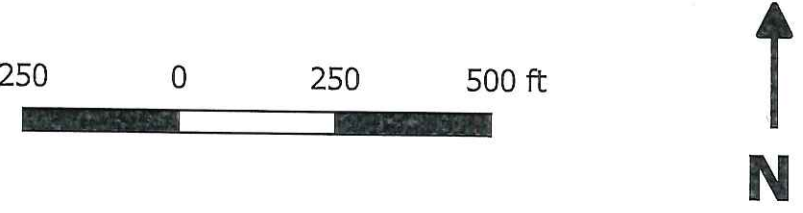
Structures

 Landfill Property

— Roads



**Figure 3: New Cut Landfill
Groundwater Elevation Contours**



Legend

- | | |
|-------------------|-----------------------------------|
| Groundwater Wells | Landfill Property |
| Monitoring Well | Roads |
| Dormant Well | Topographic Contours - 2ft |
| Groundwater Wells | Groundwater Elevation Contours |
| Recovery Well | Groundwater Contour Line |
| Limit of Waste | Groundwater Contour Line Inferred |
| Streams | |

APPENDIX B: INFLUENT DATA SUMMARY

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/1/2003	5/1/2003	6/1/2003	7/2/2003	8/14/2003	9/5/2003
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	2.1	2.2	3.5	2.5	2.3	2.8
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	4.3	2.9	2.8	ND	3.8	1.8
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L						
Acrylonitrile	ug/L						
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.2	1	1.2	1.2	1.1	1.2
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	9.8	7.3	9.2	6.9	5.9	5.4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND
Dichloromethane	ug/L	1.2	4	2.3	ND	ND	ND
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	1.5	1	1.2	0.8	0.7	1.6
Toluene	ug/L	0.4	2.4	ND	ND	ND	0.7
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	1.2	ND	1.5	ND	0.8	1.5
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND	ND	ND	0.6
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	21.7	20.8	21.7	11.4	14.6	15.6
Total VOCs - Cumulative	ug/L	21.7	42.5	64.2	75.6	90.2	105.8
Q (Gallon/Month)		2,965,212	2,777,467	2,926,256	2,406,755	2,133,517	1,501,594
Monthly Mass (lbs) =		0.537	0.482	0.530	0.229	0.260	0.195
Cumulative Mass (lbs) =		0.537	1.019	1.549	1.778	2.038	2.233

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/2/2003	11/5/2003	12/3/2003	1/9/2004	2/4/2004	3/9/2004
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.9	2.1	1.7	2	2.5	ND
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	ND	2.2	2.2	2	2.6	3.1
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L						
Acrylonitrile	ug/L						
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.8	0.5	0.4	0.6	0.9	0.6
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	3.8	3.7	2.7	3.1	3.8	4.7
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND
Dichloromethane	ug/L	1.3	ND	ND	1.6	1.8	ND
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	0.7	0.8	0.4	0.6	0.7	0.7
Toluene	ug/L	0.4	0.8	ND	0.4	0.4	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	0.7	0.8	0.5	0.6	0.7	0.7
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	0.9	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	10.5	10.9	7.9	10.9	13.4	9.8
Total VOCs - Cumulative	ug/L	116.3	127.2	135.1	146	159.4	169.2
Q (Gallon/Month)		1,501,594	2,607,160	2,618,551	2,622,200	2,250,400	2,140,700
Monthly Mass (lbs) =		0.132	0.237	0.173	0.239	0.252	0.175
Cummulative Mass (lbs) =		2.365	2.602	2.775	3.013	3.265	3.440

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/7/2004	5/10/2004	6/4/2004	7/2/2004	8/9/2004	9/3/2004
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	2.6	2.3	ND	ND	3.2	2.2
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.3	0.8	2	2.2	3.9	4.5
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L						
Acrylonitrile	ug/L						
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.3	1	1	0.9	1.7	1.2
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	6.3	5.8	5.3	4	6.7	4.4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND
Dichloromethane	ug/L	1.1	1.7	3.1	1.3	3.6	4
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	0.9	0.7	0.7	0.8	0.8	0.7
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	0.9	0.7	0.8	0.6	0.7	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND	ND	0.9	ND
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	14.4	13	12.9	9.8	21.5	17
Total VOCs - Cumulative	ug/L	183.6	196.6	209.5	219.3	240.8	257.8
Q (Gallon/Month)		2,798,600	2,893,800	2,429,700	3,002,339	3,567,636	3,683,591
Monthly Mass (lbs) =		0.336	0.314	0.262	0.246	0.640	0.523
Cumulative Mass (lbs) =		3.776	4.090	4.351	4.597	5.237	5.760

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Parameter	Units	10/5/2004	11/4/2004	12/9/2004	1/7/2005	2/3/2005	3/3/2005
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	ND	2.2	1.9	ND	1.8	1.8
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	2.6	2.2	1.3	1.7	4.3	2.9
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L						
Acrylonitrile	ug/L						
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.1	1.2	0.8	1	0.9	1.1
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.7	5	4	4.1	4.2	4.3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	1.4	ND	ND	ND	ND
Dichloromethane	ug/L	ND	ND	ND	ND	ND	2.2
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	0.5	0.7	0.6	0.6	0.6	0.6
Toluene	ug/L	ND	ND	ND	ND	ND	0.6
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	2.3	ND	ND	ND	ND
Trichloroethene	ug/L	ND	ND	ND	ND	0.6	0.6
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	8.9	15	8.6	7.4	12.4	14.1
Total VOCs - Cumulative	ug/L	266.7	281.7	290.3	297.7	310.1	324.2
Q (Gallon/Month)		3,512,563	4,210,441	3,633,867	2,919,800	2,478,863	2,565,411
Monthly Mass (lbs) =		0.261	0.527	0.261	0.180	0.256	0.302
Cummulative Mass (lbs) =		6.020	6.547	6.808	6.989	7.245	7.547

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Groundwater Remediation System
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Parameter	Units	4/5/2005	5/6/2005	6/9/2005	7/6/2005	8/4/2005	9/7/2005
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.9	ND	1.4	1.5	1.4	1.7
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	2.7	3.5	2.2	1	1.4	1.6
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L						ND
Acrylonitrile	ug/L						ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.2	1.1	1.2	1.1	0.7	1.4
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	ND	ND	ND	ND	ND	0.97
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.4	3.6	2.9	4.1	3.3	2.9
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND
Dichloromethane	ug/L	ND	ND	ND	ND	ND	0.33
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	0.59	0.6	ND	0.5	0.5	ND
Toluene	ug/L		0.7	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	ND	ND	ND	0.6	0.5	0.41
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	0.26
TOTAL VOCs	ug/L	10.79	9.5	7.7	8.8	7.8	9.57
Total VOCs - Cumulative	ug/L	334.99	344.49	352.19	360.99	368.79	378.36
Q (Gallon/Month)		2,568,717	2,431,134	2,136,732	2,228,422	2,345,410	2,038,783
Monthly Mass (lbs) =		0.231	0.193	0.137	0.164	0.153	0.163
Cumulative Mass (lbs) =		7.778	7.971	8.108	8.272	8.424	8.587

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Parameter	Units	10/5/2005	11/4/2005	12/2/2005	1/6/2006	2/9/2006	3/7/2006
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.4	2.2	1.7	1.3	1.2	2
1,1-Dichloroethene	ug/L	0.21	ND	ND	ND	ND	0.21
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.7	1.5	0.66	0.58	0.28	0.53
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L						
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.5	1.2	0.71	0.73	0.29	0.63
Chlorodibromomethane	ug/L						
Chloroethane	ug/L	0.77	1.5	0.85	1.1	ND	0.95
Chloroform	ug/L						
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.5	4.2	2.1	3.3	2.1	2.8
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	ND
Dichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L						
Tetrachloroethene	ug/L	0.49	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	0.72	0.51	0.29	0.46	0.33	0.42
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	ND	0.29	ND	0.24	ND	ND
TOTAL VOCs	ug/L	11.29	11.4	6.31	7.71	4.2	7.54
Total VOCs - Cumulative	ug/L	389.65	401.05	407.36	415.07	419.27	426.81
Q (Gallon/Month)		2,544,386	2,336,361	2,279,553	2,441,000	2,206,000	2,458,000
Monthly Mass (lbs) =		0.240	0.222	0.120	0.157	0.077	0.155
Cummulative Mass (lbs) =		8.827	9.049	9.169	9.326	9.404	9.558

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Parameter	Units	4/5/2006	5/5/2006	6/8/2006	7/13/2006	8/16/2006	9/12/2006
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.5	2.1	1.8	1.4	1.4	1.8
1,1-Dichloroethene	ug/L	0.31	ND	ND	0.49	0.56	0.38
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.2	0.29	1.2	1.9	1.4	0.85
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L				ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.89	0.29	0.83	1.5	1.2	0.72
Chlorodibromomethane	ug/L				ND	ND	ND
Chloroethane	ug/L	0.57	0.92	0.8	0.64	0.59	0.87
Chloroform	ug/L				ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.3	2.6	3.1	4.4	3.7	4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	ND	ND	ND			
Dichloromethane	ug/L	ND	ND	ND			
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L				0.23	0.27	0.13
Tetrachloroethene	ug/L	0.39	0.4	ND	0.42	ND	0.41
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND			
Trichloroethene	ug/L	0.47	0.56	0.41	0.7	0.45	0.52
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L	ND	ND	ND			
Vinyl chloride	ug/L	0.28	ND	ND	ND	ND	0.26
TOTAL VOCs	ug/L	9.91	7.16	8.14	11.68	9.57	9.94
Total VOCs - Cumulative	ug/L	436.72	443.88	452.02	463.7	473.27	483.21
Q (Gallon/Month)		2,447,000	2,306,000	2,603,000	2,909,000	2,521,000	2,436,000
Monthly Mass (lbs) =		0.202	0.138	0.177	0.284	0.201	0.202
Cummulative Mass (lbs) =		9.761	9.898	10.075	10.359	10.560	10.762

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Parameter	Units	10/4/2006	11/17/2006	12/7/2006	1/3/2007	2/20/2007	3/1/2007
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.72	2.1	1.3	1.6	1.5	1.7
1,1-Dichloroethene	ug/L	ND	0.85	ND	0.7	0.3	0.42
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.23	2.8	0.39	1.4	1.1	1.5
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.29	2.5	0.36	1.2	0.89	1.2
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	1.6	0.42	0.61	0.52	0.73
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.5	8.2	2.6	5.7	3.9	4.4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	0.93	ND	0.41	0.17	0.24
Tetrachloroethene	ug/L	ND	0.59	ND	0.62	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.45	0.87	0.46	0.74	0.52	0.52
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	0.71	ND	0.3	ND	ND
TOTAL VOCs	ug/L	4.19	21.15	5.53	13.28	8.9	10.71
Total VOCs - Cumulative	ug/L	487.4	508.55	514.08	527.36	536.26	546.97
Q (Gallon/Month)		2,529,000	2,492,000	2,804,000	2,428,000	2,250,000	2,689,000
Monthly Mass (lbs) =		0.088	0.440	0.129	0.269	0.167	0.240
Cummulative Mass (lbs) =		10.850	11.290	11.420	11.689	11.856	12.096

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Groundwater Remediation System
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Parameter	Units	4/5/2007	5/2/2007	6/6/2007	7/9/2007	8/1/2007	9/5/2007
1,1,1-Trichloroethane	ug/L	ND	ND	0.58	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	2	1.4	1.3	1.3	1.2	1.8
1,1-Dichloroethene	ug/L	0.46	0.38	0.5	ND	ND	0.36
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	1.2	1.5	1.5	ND	0.54	2
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	
Acrolein	ug/L	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	
Benzene	ug/L	ND	ND	ND	ND	ND	
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	
Bromoform	ug/L	ND	ND	ND	ND	ND	
Bromomethane	ug/L	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	1	1.2	1.7	ND	0.56	1.6
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	
Chloroethane	ug/L	1	0.82	0.81	ND	ND	0.99
Chloroform	ug/L	ND	ND	ND	ND	ND	
Chloromethane	ug/L	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	4	4.8	5.5	3.9	3	5.7
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	
Methylene Chloride	ug/L	0.22	0.21	0.45	ND	0.18	0.29
Tetrachloroethene	ug/L	ND	0.63	0.56	ND	0.44	0.7
Toluene	ug/L	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.56	0.74	0.98	ND	0.47	0.94
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	0.24	0.41	ND	ND	0.29
TOTAL VOCs	ug/L	10.44	11.92	13.71	5.2	6.39	14.67
Total VOCs - Cumulative	ug/L	557.41	569.33	583.04	588.24	594.63	609.3
Q (Gallon/Month)		2,868,000	2,695,000	3,102,000	3,179,000	2,809,000	2,457,000
Monthly Mass (lbs) =		0.250	0.268	0.355	0.138	0.150	0.301
Cummulative Mass (lbs) =		12.346	12.614	12.969	13.107	13.257	13.557

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/4/2007	11/5/2007	12/4/2007	1/7/2008	2/11/2008	3/3/2008
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.5	1.8	1.2	1.1	1	1.7
1,1-Dichloroethene	ug/L	0.36	0.49	ND	0.31	ND	0.35
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.3	0.91	0.66	0.72	0.71	0.88
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.4	0.91	0.61	0.71	0.62	0.84
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	1.1	0.84	0.54	ND	0.45	1.1
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	4.2	4.7	2.9	3.1	3.2	3.6
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	0.24	0.28	ND	ND	ND	0.23
Tetrachloroethene	ug/L	0.77	0.53	0.62	0.41	0.43	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.82	0.7	0.44	0.5	0.54	0.7
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	0.24	0.2	ND	ND	ND	ND
TOTAL VOCs	ug/L	11.93	11.36	6.97	6.85	6.95	9.4
Total VOCs - Cumulative	ug/L	621.23	632.59	639.56	646.41	653.36	662.76
Q (Gallon/Month)		3,110,000	2,906,000	2,910,000	2,899,000	2,611,000	2,927,000
Monthly Mass (lbs) =		0.310	0.275	0.169	0.166	0.151	0.230
Cummulative Mass (lbs) =		13.867	14.143	14.312	14.477	14.629	14.858

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/7/2008	5/6/2008	6/3/2008	7/8/2008	8/11/2008	9/3/2008
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	2.4	1.4	1.7	1.2	1.2	1.3
1,1-Dichloroethene	ug/L	0.43	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	2.1	0.47	0.65	0.79	0.73	0.43
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.8	0.54	0.59	0.71	0.79	0.55
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	1.6	0.62	0.77	0.79	0.45	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	5.8	2.8	2.5	3.2	2.5	3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	0.32	ND	ND	0.11	ND	ND
Tetrachloroethene	ug/L	0.69	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.83	0.46	0.36	ND	0.48	0.35
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	0.51	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	16.48	6.29	6.57	6.8	6.15	5.63
Total VOCs - Cumulative	ug/L	679.24	685.53	692.1	698.9	705.05	710.68
Q (Gallon/Month)		2,709,000	2,894,000	2,926,000	2,858,000	2,721,000	2,576,000
Monthly Mass (lbs) =		0.373	0.152	0.160	0.162	0.140	0.121
Cummulative Mass (lbs) =		15.231	15.383	15.543	15.705	15.845	15.966

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/1/2008	11/4/2008	12/3/2008	1/12/2009	2/4/2009	3/3/2009
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.1	1.1	1.1	1.6	0.84	1.3
1,1-Dichloroethene	ug/L	ND	ND	ND	0.4	ND	0.25
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.75	0.73	0.81	1.3	0.4	0.47
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.74	0.68	0.87	1	0.36	0.49
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.56	0.46	ND	1.2	0.39	0.39
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.8	2.4	2.9	2.6	1.8	3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	0.38	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	0.41	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.38	0.29	0.5	0.41	0.38	0.4
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	0.26	ND	ND
TOTAL VOCs	ug/L	6.33	5.66	6.97	8.77	4.17	6.3
Total VOCs - Cumulative	ug/L	717.01	722.67	729.64	738.41	742.58	748.88
Q (Gallon/Month)		2,655,000	2,552,000	2,470,000	2,357,000	2,195,000	2,511,000
Monthly Mass (lbs) =		0.140	0.121	0.144	0.172	0.076	0.132
Cummulative Mass (lbs) =		16.106	16.227	16.371	16.543	16.619	16.751

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/7/2009	5/12/2009	6/2/2009	7/6/2009	8/4/2009	9/2/2009
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.1	1	1.2	1.2	1	1.2
1,1-Dichloroethene	ug/L	ND	0.2	0.43	0.24	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.67	0.69	0.74	0.43	0.22	0.9
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.72	0.8	0.89	0.56	0.27	0.91
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	0.68	0.58	ND	ND	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.4	2.3	2.8	2.5	1.9	2.6
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.39	0.36	ND	ND	ND	0.36
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	5.28	6.03	6.64	4.93	3.39	5.97
Total VOCs - Cumulative	ug/L	754.16	760.19	766.83	771.76	775.15	781.12
Q (Gallon/Month)		2,521,000	2,868,000	2,722,000	2,685,000	2,628,000	2,584,000
Monthly Mass (lbs) =		0.111	0.144	0.151	0.110	0.074	0.129
Cumulative Mass (lbs) =		16.863	17.007	17.158	17.268	17.342	17.471

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/1/2009	11/2/2009	12/4/2009	1/5/2010	2/3/2010	3/3/2010
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.2	2	1.7	1.5	0.98	1.5
1,1-Dichloroethene	ug/L	0.45	0.32	0.28	ND	0.33	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.7	0.57	1.5	0.87	0.94	0.7
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.9	0.59	1.3	0.78	1	0.76
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.77	0.6	1.4	0.68	0.46	0.67
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	3.2	3.6	2.6	3.7	2.5	2.5
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	2.6	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	0.38	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.4	0.52	0.42	0.43	ND	0.63
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	0.24	0.27	ND	ND	ND
TOTAL VOCs	ug/L	9.62	8.44	9.47	10.94	6.21	6.76
Total VOCs - Cumulative	ug/L	790.74	799.18	808.65	819.59	825.8	832.56
Q (Gallon/Month)		2,693,000	2,579,000	2,745,000	2,181,000	2,569,000	3,063,000
Monthly Mass (lbs) =		0.216	0.182	0.217	0.199	0.133	0.173
Cummulative Mass (lbs) =		17.687	17.869	18.086	18.285	18.418	18.591

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Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/6/2010	5/5/2010	6/7/2010	7/2/2010	8/5/2010	9/1/2010
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.4	0.99	1.3	1	0.73	0.86
1,1-Dichloroethene	ug/L	0.59	ND	ND	0.38	ND	0.19
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.4	0.71	0.76	1.6	0.53	0.37
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.7	0.63	0.74	1.9	0.65	0.48
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	1.2	0.42	0.53	0.6	ND	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	3.3	1.7	1.9	2.5	2	1.8
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	0.28	ND	ND	0.29	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.44	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	10.31	4.45	5.23	8.27	3.91	3.7
Total VOCs - Cumulative	ug/L	842.87	847.32	852.55	860.82	864.73	868.43
Q (Gallon/Month)		2,788,000	3,076,000	2,873,000	2,802,000	2,894,000	2,732,000
Monthly Mass (lbs) =		0.240	0.114	0.125	0.193	0.094	0.084
Cumulative Mass (lbs) =		18.831	18.945	19.070	19.264	19.358	19.442

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Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/5/2010	11/1/2010	12/3/2010	1/4/2011	2/3/2011	3/4/2011
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.1	0.84	1.9	0.8	ND	0.98
1,1-Dichloroethene	ug/L	ND	ND	0.19	0.24	0.2	0.26
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.59	0.46	0.66	0.21	1.3	0.28
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.84	0.71	0.79	0.4	1.5	0.43
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.47	ND	0.58	ND	0.51	0.29
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.7	2.1	3.4	2	2	2.3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	0.46	ND	ND	0.36
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	0.29	ND	ND	ND
TOTAL VOCs	ug/L	5.7	4.11	8.27	3.65	5.51	4.9
Total VOCs - Cumulative	ug/L	874.13	878.24	886.51	890.16	895.67	900.57
Q (Gallon/Month)		2,550,000	2,638,000	2,612,000	2,622,000	2,416,000	2,874,000
Monthly Mass (lbs) =		0.121	0.090	0.180	0.080	0.111	0.118
Cummulative Mass (lbs) =		19.564	19.654	19.834	19.914	20.025	20.143

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/1/2011	5/4/2011	6/6/2011	7/12/2011	8/4/2011	9/2/2011
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.9	0.89	1.5	0.39	0.97	ND
1,1-Dichloroethene	ug/L	0.28	0.21	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.73	0.5	0.7	0.6	0.46	0.41
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.2	0.74	0.75	0.97	0.71	0.7
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.71	0.33	0.59	ND	0.46	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.4	2.2	2.2	1.8	1.6	1.7
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.33	ND	0.34	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	6.55	4.87	6.08	3.76	4.2	2.81
Total VOCs - Cumulative	ug/L	907.12	911.99	918.07	921.83	926.03	928.84
Q (Gallon/Month)		2,831,000	3,072,000	2,875,000	2,274,000	2,463,000	2,617,000
Monthly Mass (lbs) =		0.155	0.125	0.146	0.071	0.086	0.061
Cumulative Mass (lbs) =		20.298	20.423	20.568	20.640	20.726	20.787

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/4/2011	11/2/2011	12/2/2011	1/4/2012	2/3/2012	3/9/2012
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.62	0.76	1.4	0.69	0.76	0.68
1,1-Dichloroethene	ug/L	ND	0.26	0.18	0.2	ND	0.22
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.26	0.51	0.72	0.39	0.27	0.82
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.37	0.61	0.87	0.54	0.4	1.1
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	0.69	ND	ND	0.33
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	1.2	2.7	3.6	3.3	2.7	3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	0.3	0.28	0.33	0.34	0.4
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	0.4	0.56	0.47	0.43	0.58
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	2.45	5.54	8.3	5.92	4.9	7.13
Total VOCs - Cumulative	ug/L	931.29	936.83	945.13	951.05	955.95	963.08
Q (Gallon/Month)		2,605,000	3,499,000	3,653,000	3,581,000	2,638,000	2,873,000
Monthly Mass (lbs) =		0.053	0.162	0.253	0.177	0.108	0.171
Cummulative Mass (lbs) =		20.841	21.002	21.255	21.432	21.540	21.711

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/9/2012	5/1/2012	6/1/2012	7/16/2012	8/1/2012	9/5/2012
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.2	0.66	1.3	0.82	1.3	0.65
1,1-Dichloroethene	ug/L	0.2	ND	0.28	0.36	0.33	0.19
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.6	0.8	0.74	1.1	1.3	0.86
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	1.5	ND	0.86	1.2	1.4	0.91
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.57	ND	0.85	ND	0.69	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.6	2.7	2.6	3.4	3.6	3.1
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	0.34	ND	0.3	0.45	0.36	0.44
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.45	0.44	0.51	0.63	0.72	0.46
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	8.46	4.6	7.44	7.96	9.7	6.61
Total VOCs - Cumulative	ug/L	971.54	976.14	983.58	991.54	1001.24	1007.85
Q (Gallon/Month)		3,265,000	3,332,000	2,717,000	2,570,000	2,648,000	2,866,000
Monthly Mass (lbs) =		0.230	0.128	0.169	0.171	0.214	0.158
Cumulative Mass (lbs) =		21.942	22.070	22.238	22.409	22.623	22.781

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/3/2012	11/6/2012	12/7/2012	1/7/2013	2/13/2013	3/11/2013
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.2	0.99	1.1	0.94	0.67	0.64
1,1-Dichloroethene	ug/L	0.22	0.19	ND	ND	ND	0.17
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.62	0.81	0.64	0.59	0.96	0.39
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.44	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.53	0.86	0.7	0.55	1.2	0.49
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	0.49	0.51	0.45	ND	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	0.37	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.6	2	2.7	1.8	2.2	1.9
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	0.43	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	0.29	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.54	0.4	0.4	ND	0.38	0.39
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	6.95	6.03	6.05	4.33	5.41	3.98
Total VOCs - Cumulative	ug/L	1014.8	1020.83	1026.88	1031.21	1036.62	1040.6
Q (Gallon/Month)		2,913,000	3,109,000	3,090,000	3,127,000	2,873,000	2,451,000
Monthly Mass (lbs) =		0.169	0.156	0.156	0.113	0.130	0.081
Cummulative Mass (lbs) =		22.950	23.107	23.263	23.376	23.505	23.587

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Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/3/2013	5/6/2013	6/13/2013	7/15/2013	8/19/2013	9/9/2013
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	1.5	0.66	0.36	1	1.2	ND
1,1-Dichloroethene	ug/L	0.4	0.25	ND	0.19	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	ND	ND	0.4	0.44	0.84	0.49
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	ND	0.99	0.46	0.55	1	0.39
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	0.44	ND	ND	0.51	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	3.6	2.6	1.5	1.6	2.7	2
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	0.35	0.33	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	0.73	0.44	0.46	0.34	0.39	0.86
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	6.23	5.73	3.51	4.12	6.64	3.74
Total VOCs - Cumulative	ug/L	1046.83	1052.56	1056.07	1060.19	1066.83	1070.57
Q (Gallon/Month)		2,991,000	3,378,000	3,022,000	2,693,000	2,995,000	2,908,000
Monthly Mass (lbs) =		0.155	0.162	0.089	0.093	0.166	0.091
Cumulative Mass (lbs) =		23.742	23.904	23.992	24.085	24.251	24.342

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Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/1/2013	11/6/2013	12/4/2013	1/13/2014	2/4/2014	3/10/2014
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	ND	0.75	0.51	1	0.6	0.65
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	0.19
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.43	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	0.31	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.62	ND	1.1	ND	0.29	ND
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	ND	ND	ND	0.29
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.1	1.7	2.2	2.4	2	2.4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	0.92	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	3.15	2.45	3.81	3.4	4.12	3.53
Total VOCs - Cumulative	ug/L	1073.72	1076.17	1079.98	1083.38	1087.5	1091.03
Q (Gallon/Month)		3,308,000	3,194,000	3,337,000	3,266,000	3,180,000	3,721,000
Monthly Mass (lbs) =		0.087	0.065	0.106	0.093	0.109	0.110
Cummulative Mass (lbs) =		24.429	24.494	24.600	24.693	24.802	24.911

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/4/2014	5/5/2014	6/4/2014	7/2/2014	8/6/2014	9/3/2014
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.62	0.39	0.44	0.62	0.54	0.81
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.17	0.21	0.25
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.3	0.2	0.22	0.24	0.32	0.38
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	ND	0.29	ND	0.84
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	0.27
cis-1,2-Dichloroethene	ug/L	1.7	1.4	1.9	1.8	2.2	2.3
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	2.62	1.99	2.56	3.12	3.27	4.85
Total VOCs - Cumulative	ug/L	1093.65	1095.64	1098.2	1101.32	1104.59	1109.44
Q (Gallon/Month)		3,684,000	3,671,000	2,023,000	1,889,000	1,887,000.0	1,861,000
Monthly Mass (lbs) =		0.081	0.061	0.043	0.049	0.051	0.075
Cummulative Mass (lbs) =		24.992	25.053	25.096	25.145	25.197	25.272

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/2/2014	11/5/2014	12/4/2014	1/8/2015	2/27/2015	3/25/2015
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.79	1.2	0.29	1.1	0.74	0.6
1,1-Dichloroethene	ug/L	ND	0.18	ND	0.18	0.34	0.2
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.25	0.66	ND	0.78	0.76	0.3
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.43	0.34	0.44	0.35	0.32	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.53	0.78	ND	1	0.93	0.39
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.26	0.48	ND	0.57	0.28	0.27
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.9	2.9	0.66	2.4	2.4	1.8
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	7.7	0.48	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	5.16	6.54	9.09	6.86	5.77	3.56
Total VOCs - Cumulative	ug/L	1114.6	1121.14	1130.23	1137.09	1142.86	1146.42
Q (Gallon/Month)		1,984,000	1,753,000	2,099,000	2,890,000	2,762,000	3,055,000
Monthly Mass (lbs) =		0.085	0.096	0.159	0.165	0.133	0.091
Cummulative Mass (lbs) =		25.358	25.453	25.612	25.778	25.911	26.002

Appendix B
New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/17/2015	5/21/2015	6/17/2015	7/21/2015	8/12/2015	9/9/2015
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.72	0.88	0.94	0.96	0.78	0.56
1,1-Dichloroethene	ug/L	0.28	0.36	0.24	0.25	0.25	0.2
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.66	0.47	0.62	0.5	ND	0.22
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	0.33	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.75	0.65	0.85	0.67	0.3	0.25
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	0.51	ND	ND	ND
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2.1	2.3	1.8	1.9	2.2	1.4
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	4.51	4.66	5.29	4.28	3.53	2.63
Total VOCs - Cumulative	ug/L	1150.93	1155.59	1160.88	1165.16	1168.69	1171.32
Q (Gallon/Month)		3,512,000	3,268,000	3,182,000	3,446,000	3,371,000	2,994,000
Monthly Mass (lbs) =		0.132	0.127	0.140	0.123	0.099	0.066
Cumulative Mass (lbs) =		26.134	26.261	26.401	26.524	26.624	26.689

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/9/2015	11/16/2015	12/10/2015	1/8/2016	2/23/2016	3/9/2016
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.73	0.42	0.78	0.52	0.55	0.84
1,1-Dichloroethene	ug/L	0.25	ND	0.22	ND	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.16	0.39	0.78	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	0.35	0.29	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.27	0.59	0.94	0.5	0.43	0.61
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	0.29	ND	0.34	ND	ND	0.45
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	0.3	0.38	0.36	ND
cis-1,2-Dichloroethene	ug/L	1.9	1.6	1.8	1.7	1.7	1.7
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	1.7	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L						
Trichloroethene	ug/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	3.6	3.35	5.45	4.8	3.04	3.6
Total VOCs - Cumulative	ug/L	1174.92	1178.27	1183.72	1188.52	1191.56	1195.16
Q (Gallon/Month)		2,522,000	2,777,000	3,576,000	3,741,000	3,467,000	3,669,000
Monthly Mass (lbs) =		0.076	0.078	0.163	0.150	0.088	0.110
Cummulative Mass (lbs) =		26.765	26.843	27.005	27.155	27.243	27.353

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	4/15/2016	5/13/2016	6/24/2016	7/15/2016	8/26/2016	9/19/2016
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.89	0.87	0.58	0.92	1.5	1.8
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	0.44	0.79
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.56	0.37	0.36	ND	0.83	0.94
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.76	0.74	0.41	0.99	0.77	1.1
Chlorodibromomethane	ug/L	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	ND	ND	ND	0.65
Chloroform	ug/L	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	2	1.6	1.4	1.7	1.5	2.2
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L						
Dichloromethane	ug/L						
Ethylbenzene	ug/L	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	0.48
Tetrachloroethene	ug/L	ND	ND	ND	ND	ND	0.37
Toluene	ug/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND		
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	ND
Tribromomethane	ug/L					ND	ND
Trichloroethene	ug/L	ND	ND	ND	ND	0.38	0.49
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	ND
Trichloromethane	ug/L						
Vinyl chloride	ug/L	ND	ND	ND	ND	ND	ND
TOTAL VOCs	ug/L	4.21	3.58	2.75	3.61	5.42	8.82
Total VOCs - Cumulative	ug/L	1199.37	1202.95	1205.7	1209.31	1214.73	1223.55
Q (Gallon/Month)		3,521,000	3,696,000	3,563,000	2,200,000	70,000	410,000
Monthly Mass (lbs) =		0.124	0.110	0.082	0.066	0.003	0.030
Cummulative Mass (lbs) =		27.477	27.588	27.669	27.736	27.739	27.769

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	10/4/2016	11/2/2016	12/2/2016	1/17/2017
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	0.63	0.79	0.77	1
1,1-Dichloroethene	ug/L	0.29	ND	ND	0.35
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	1.8	1.1	0.88	0.88
2-Chloroethylvinyl ether	ug/L	ND	ND	ND	ND
Acrolein	ug/L	ND	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND	ND
Benzene	ug/L	ND	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND	ND
Bromoform	ug/L	ND	ND	0.63	ND
Bromomethane	ug/L	ND	ND	0.44	ND
Carbon tetrachloride	ug/L	ND	ND	ND	ND
Chlorobenzene	ug/L	1.8	1.2	1.4	1.2
Chlorodibromomethane	ug/L	ND	ND	ND	ND
Chloroethane	ug/L	ND	ND	0.47	0.55
Chloroform	ug/L	0.25	ND	ND	ND
Chloromethane	ug/L	0.35	0.36	0.36	ND
cis-1,2-Dichloroethene	ug/L	1.8	2	1.7	1.9
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND
Dibromochloromethane	ug/L				
Dichloromethane	ug/L				
Ethylbenzene	ug/L	ND	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND	ND
Toluene	ug/L	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L				ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND
Tribromomethane	ug/L	ND	ND	ND	
Trichloroethene	ug/L	ND	ND	0.65	ND
Trichlorofluoromethane	ug/L	ND	ND	ND	ND
Trichloromethane	ug/L				
Vinyl chloride	ug/L	ND	ND	ND	ND
TOTAL VOCs	ug/L	6.92	5.45	7.3	5.88
Total VOCs - Cumulative	ug/L	1230.47	1235.92	1243.22	1249.1
Q (Gallon/Month)		3,132,000	2,484,000	2,889,000	2,604,000
Monthly Mass (lbs) =		0.181	0.113	0.176	0.128
Cumulative Mass (lbs) =		27.950	28.063	28.239	28.367

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New Cut Landfill
Groundwater Remediation System
Influent VOC Data

Parameter	Units	2/17/2017	3/6/2017	4/11/2017
1,1,1-Trichloroethane	ug/L	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND
1,1,2-Trichloroethane	ug/L	ND	ND	ND
1,1-Dichloroethane	ug/L	0.68	0.46	0.66
1,1-Dichloroethene	ug/L	0.39	ND	ND
1,2-Dichlorobenzene	ug/L	ND	ND	ND
1,2-Dichloroethane	ug/L	ND	ND	ND
1,2-Dichloropropane	ug/L	ND	ND	ND
1,3-Dichlorobenzene	ug/L	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	0.48	0.51
2-Chloroethylvinyl ether	ug/L	ND	ND	ND
Acrolein	ug/L	ND	ND	ND
Acrylonitrile	ug/L	ND	ND	ND
Benzene	ug/L	ND	ND	ND
Bromodichloromethane	ug/L	ND	ND	ND
Bromoform	ug/L	ND	ND	ND
Bromomethane	ug/L	ND	ND	ND
Carbon tetrachloride	ug/L	ND	ND	ND
Chlorobenzene	ug/L	0.45	0.52	0.78
Chlorodibromomethane	ug/L	ND	ND	ND
Chloroethane	ug/L	ND	ND	0.35
Chloroform	ug/L	ND	ND	ND
Chloromethane	ug/L	0.42	ND	ND
cis-1,2-Dichloroethene	ug/L	1.7	1.2	1.8
cis-1,3-Dichloropropene	ug/L	ND	ND	ND
Dibromochloromethane	ug/L			
Dichloromethane	ug/L			
Ethylbenzene	ug/L	ND	ND	ND
Methylene Chloride	ug/L	ND	ND	ND
Tetrachloroethene	ug/L	ND	ND	ND
Toluene	ug/L	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	ND	ND	ND
Tribromomethane	ug/L			
Trichloroethene	ug/L	0.53	ND	ND
Trichlorofluoromethane	ug/L	ND	ND	ND
Trichloromethane	ug/L			
Vinyl chloride	ug/L	ND	ND	ND
TOTAL VOCs	ug/L	4.67	2.66	4.1
Total VOCs - Cumulative	ug/L	1253.77	1256.43	1260.53
Q (Gallon/Month)		2,342,000	2,563,000	2,577,000
Monthly Mass (lbs) =		0.091	0.057	0.088
Cummulative Mass (lbs) =		28.458	28.515	28.603

APENDIX C: RATIO CALCULATIONS – SUPPORTING DATA

Appendix C - Table 10
New Cut Landfill
Contaminants of Concern
Rebound Ratio Calculations
April 2017 Data - Monitoring Wells

COC Parameter	Regulatory Criteria ⁽²⁾ (µg/L)	N-008		N-010		N-011		N-013		N-014	
		Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria
1,1-Dichloroethane ⁽¹⁾	90	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
1,4-Dichlorobenzene	75	0.34	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Chloroethane ⁽¹⁾	3.6	0.56	0.16	0	0.00	0	0.00	0	0.00	0	0.00
cis-1,2-Dichloroethene	70	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Tetrachloroethene	5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Trichloroethene	5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Vinyl Chloride	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
COC Parameter	Regulatory Criteria ⁽²⁾ (µg/L)	N-016		N-017		N-018		N-101		N-103	
		Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria
1,1-Dichloroethane ⁽¹⁾	90	1.20	0.01	0.75	0.01	0	0.00	0	0.00	0	0.00
1,4-Dichlorobenzene	75	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Chloroethane ⁽¹⁾	3.6	0	0.00	0	0.00	0	0.00	0.93	0.26	0	0.00
cis-1,2-Dichloroethene	70	1.7	0.02	1.2	0.02	0	0.00	0	0.00	0	0.00
Tetrachloroethene	5	0.52	0.10	0	0.00	0	0.00	0	0.00	0	0.00
Trichloroethene	5	1.3	0.26	0	0.00	0	0.00	0	0.00	0	0.00
Vinyl Chloride	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Note 1: Regulatory criteria based on 2008 MDE Risk-Based Cleanup Standards for Type I and Type II Aquifers.

Note 2: Regulatory criteria based on U.S. EPA MCLs unless otherwise noted.

Note: Ratio value derived by dividing the current result by its respective regulatory criteria.

Note: values in red indicate Category B results

Appendix C - Table 11
New Cut Landfill
Contaminants of Concern
Rebound Ratio alculations
April 2017 Data - Recovery Wells

Parameter	Regulatory Criteria ⁽²⁾ (µg/L)	NW-A		NW-B		NW-C		NW-D		NW-E		NW-F	
		Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria
1,1-Dichloroethane ⁽¹⁾	90	0	0.00	4	0.04	1.30	0.01	0.37	0.00	0.51	0.01	0	0.00
1,4-Dichlorobenzene	75	0	0.00	1.3	0.02	0.77	0.01	0.47	0.01	0	0.00	0	0.00
Chloroethane ⁽¹⁾	3.6	0	0.00	1.6	0.44	1.00	0.28	0	0.00	0	0.00	0	0.00
cis-1,2-Dichloroethene	70	1.3	0.02	2.0	0.03	1.0	0.01	0	0.00	0.75	0.01	0.38	0.01
Tetrachloroethene	5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Trichloroethene	5	0.45	0.09	0.72	0.14	0.47	0.09	0	0.00	0	0.00	0	0.00
Vinyl Chloride	2	0	0.00	1.2	0.60	0	0.00	0	0.00	0	0.00	0	0.00

Parameter	Regulatory Criteria ⁽²⁾	NW-G		NW-H		NW-I		NW-K		NW-L		N-4611	
		Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria
1,1-Dichloroethane ⁽¹⁾	90	0	0.00	0.52	0.01	0.53	0.01	0.61	0.01	0	0.00	1.40	0.02
1,4-Dichlorobenzene	75	0.28	0.00	5.5	0.07	3.2	0.04	5.1	0.07	2.0	0.03	0.93	0.01
Chloroethane ⁽¹⁾	3.6	0	0.00	0	0.00	0	0.00	1.1	0.31	0.94	0.26	0.72	0.20
cis-1,2-Dichloroethene	70	0.46	0.01	2.7	0.04	2.3	0.03	3.9	0.06	0.42	0.01	3.6	0.05
Tetrachloroethene	5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.39	0.08
Trichloroethene	5	0	0.00	0	0.00	0	0.00	0.5	0.10	0	0.00	0.75	0.15
Vinyl Chloride	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Parameter	Regulatory Criteria ⁽²⁾	N-4575		NBR-1		NBR-2		NBR-5		NBR-6	
		Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria	Current Result (µg/L)	RATIO Current Result/Reg. Criteria
1,1-Dichloroethane ⁽¹⁾	90	1.60	0.02	1.60	0.02	2.6	0.03	0	0.00	0	0.00
1,4-Dichlorobenzene	75	0.29	0.00	0.37	0.00	1.2	0.02	0	0.00	0	0.00
Chloroethane ⁽¹⁾	3.6	0	0.00	0.5	0.14	0	0.00	0	0.00	0	0.00
cis-1,2-Dichloroethene	70	3.8	0.05	4.1	0.06	4.5	0.06	0.38	0.00	0	0.00
Tetrachloroethene	5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Trichloroethene	5	1.2	0.24	0.85	0.17	0.87	0.17	0	0.00	0	0.00
Vinyl Chloride	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Note 1: Regulatory criteria based on 2008 MDE Risk-Based Cleanup Standards for Type I and Type II Aquifers.

Note 2: Regulatory criteria based on U.S. EPA MCLs unless otherwise noted.

Note: Ratio value derived by dividing the current result by its respective regulatory criteria.

Note: values in red indicate Category B results